EXHIBIT E

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NOTICE OF ALLOWANCE AND FEE(S) DUE

62574 7590 08/18/2014

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EXAMINER
WONG, LINDA

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 08/18/2014

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/769,747	04/29/2010	Marcos C. Tzannes	6936-55-PUS-CON	8332

TITLE OF INVENTION: DMT SYMBOL REPETITION IN THE PRESENCE OF IMPULSE NOISE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	11/18/2014

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

62574 7590 08/18/2014
Jason H. Vick
Sheridan Ross, PC
Suite # 1200
1560 Broadway
Denver, CO 80202

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	11/18/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
WONG, LINDA	2633	375-222000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
❑ Issue Fee
❑ Publication Fee (No small entity discount permitted)
❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)
❑ A check is enclosed.
❑ Payment by credit card. Form PTO-2038 is attached.
❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
❑ Applicant certifying micro entity status. See 37 CFR 1.29
NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UNITED STATES PATENT AND TRADEMARK OFFICE

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 12/769,747	Applicant(s) TZANNES, MARCOS C.	
	Examiner LINDA WONG	Art Unit 2633	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *4/21/2014*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *44-55,59-61 and 68-83*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☒ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

The present application is being examined under the pre-AIA first to invent provisions.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jason Vick Reg No.: 42285 on July 31, 2014.

The application has been amended as follows:

44. A method, in a multicarrier communication system including a first and second transceiver, the method comprising:

transmitting, from the first transceiver to the second transceiver, a first initialization message indicating an impulse noise protection value;

transmitting, from the second transceiver to the first transceiver, a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting, from the first transceiver to the second transceiver, a third initialization message, wherein the first transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third

initialization message is indicated in the second initialization message transmitted from the second transceiver to first transceiver.

45. A method, in a multicarrier communication system including at least one transceiver, the method comprising:

transmitting a first initialization message indicating an impulse noise protection value;

receiving a second initialization message comprising information that indicates a number of repeated DMT, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting a third initialization message, wherein the at least one transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message.

46. A method in a multicarrier communication system including at least one transceiver, the method comprising:

receiving a first initialization message indicating an impulse noise protection value;

transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

receiving a third initialization message, wherein at least one message bit of the third initialization message is modulated onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the transmitted second initialization message.

50. A non-transitory computer readable information storage media having stored thereon instructions, that when executed by a processor, cause ~~to be performed the steps in claim 44~~ the processor to perform a method in a multicarrier communication system including a first and second transceiver, the method comprising:

transmitting, from the first transceiver to the second transceiver, a first initialization message indicating an impulse noise protection value;

transmitting, from the second transceiver to the first transceiver, a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting, from the first transceiver to the second transceiver, a third initialization message, wherein the first transceiver modulates at least one message bit onto repeated DMT symbols, wherein the number of repeated DMT symbols is indicated in the second initialization message transmitted from the second transceiver to first transceiver.

51. A non-transitory computer readable information storage media having stored thereon instructions, that when executed by a processor, ~~cause to be performed the steps in claim 45~~ cause the processor to perform a method, in a multicarrier communication system including at least one transceiver, the method comprising:

transmitting a first initialization message indicating an impulse noise protection value;

receiving a second initialization message comprising information that indicates a number of repeated DMT, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting a third initialization message, wherein the at least one transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message.

52. A non-transitory computer readable information storage media having stored thereon instructions, that when executed by a processor, cause ~~to be performed the steps in claim 46~~ the processor to perform a method in a multicarrier communication system including at least one transceiver, the method comprising:

receiving a first initialization message indicating an impulse noise protection value;

transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

receiving a third initialization message, wherein at least one message bit of the third initialization message is modulated onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the transmitted second initialization message.

53. A multicarrier communication system comprising:

means for transmitting from a first transceiver to a second transceiver a first initialization message indicating an impulse noise protection value;

means for transmitting from the second transceiver to the first transceiver a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

means for transmitting from the first transceiver to the second transceiver a third initialization message, wherein the first transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the second initialization message transmitted from the second transceiver to first transceiver.

54. A multicarrier communication system comprising:

means for transmitting a first initialization message indicating an impulse noise protection value;

means for receiving a second initialization message comprising information that indicates a number of repeated DMT, the number of repeated DMT symbols being greater than the impulse noise protection value; and

means for transmitting a third initialization message, wherein the transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message.

55. A multicarrier communication system comprising:

means for receiving a first initialization message indicating an impulse noise protection value;

means for transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

means for receiving a third initialization message, wherein at least one message bit of the third initialization message is modulated onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message of the third initialization message is indicated in the transmitted second initialization message.

59. A multicarrier communication system comprising:

a first transmitter module, in a first transceiver, capable of transmitting from the first transceiver to a second transceiver an initialization message indicating an impulse noise protection value;

a second transmitter module, in the second transceiver, capable of transmitting from the second transceiver to the first transceiver a second initialization message

comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; ~~and~~

a modulation module, in the first transceiver, ~~the first transmitter module capable of transmitting from the first transceiver to the second transceiver a third initialization message, wherein~~ the ~~first transceiver~~modulation module capable of ~~modulates~~modulating at least one message bit of a third initialization message onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the second initialization message transmitted from the second transceiver to first transceiver; and

the first transmitter module also capable of transmitting from the first transceiver to the second transceiver the third initialization message.

60. A multicarrier communication system comprising:

a transmitter module, in a transceiver, capable of transmitting a first initialization message indicating an impulse noise protection value;

a receiver module, in the transceiver, capable of receiving a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; ~~and~~

a modulation module, in the ~~transmitter~~transceiver, ~~and the transmitter module capable of transmitting a third initialization message, wherein~~ the ~~transceiver~~modulation module ~~modulates~~capable of modulating at least one message bit of a third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message; and

the transmitter module further capable of transmitting the third initialization message.

61. A multicarrier communication system comprising:

a receiver module, in a transceiver, capable of receiving an initialization message indicating an impulse noise protection value;

a transmitter module, in the transceiver, capable of transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

~~a demodulation module, in the transceiver, and~~ the receiver module, in the transceiver, capable of receiving a third initialization message from a second transceiver, wherein at least one message bit ~~is~~of the third initialization message was modulated onto repeated DMT symbols by a modulator in the second transceiver, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the transmitted second initialization message.

EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

44. A method, in a multicarrier communication system including a first and second transceiver, the method comprising:

transmitting, from the first transceiver to the second transceiver, a first initialization message indicating an impulse noise protection value;

transmitting, from the second transceiver to the first transceiver, a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting, from the first transceiver to the second transceiver, a third initialization message, wherein the first transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the second

initialization message transmitted from the second transceiver to first transceiver.

45. A method, in a multicarrier communication system including at least one transceiver, the method comprising:

transmitting a first initialization message indicating an impulse noise protection value;

receiving a second initialization message comprising information that indicates a number of repeated DMT, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting a third initialization message, wherein the at least one transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message.

46. A method in a multicarrier communication system including at least one transceiver, the method comprising:

receiving a first initialization message indicating an impulse noise protection value;

transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

receiving a third initialization message, wherein at least one message bit of the third initialization message is modulated onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the transmitted second initialization message.

50. A non-transitory computer readable information storage media having stored thereon instructions, that when executed by a processor, cause the processor to perform a method in a multicarrier communication system including a first and second transceiver, the method comprising:

transmitting, from the first transceiver to the second transceiver, a first initialization message indicating an impulse noise protection value;

transmitting, from the second transceiver to the first transceiver, a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting, from the first transceiver to the second transceiver, a third initialization message, wherein the first transceiver modulates at least one message bit onto repeated DMT symbols, wherein the number of repeated DMT symbols is indicated in the second initialization message transmitted from the second transceiver to first transceiver.

51. A non-transitory computer readable information storage media having stored thereon instructions, that when executed by a processor, cause the processor to perform a method, in a multicarrier communication system including at least one transceiver, the method comprising:

transmitting a first initialization message indicating an impulse noise protection value;

receiving a second initialization message comprising information that indicates a number of repeated DMT, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting a third initialization message, wherein the at least one transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message.

52. A non-transitory computer readable information storage media having stored thereon instructions, that when executed by a processor, cause the processor to perform a method in a multicarrier communication system including at least one transceiver, the method comprising:

receiving a first initialization message indicating an impulse noise protection value;

transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

receiving a third initialization message, wherein at least one message bit of the third initialization message is modulated onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the transmitted second initialization message.

53. A multicarrier communication system comprising:

means for transmitting from a first transceiver to a second transceiver a first initialization message indicating an impulse noise protection value;

means for transmitting from the second transceiver to the first transceiver a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

means for transmitting from the first transceiver to the second transceiver a third initialization message, wherein the first transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the second initialization message transmitted from the second transceiver to first transceiver.

54. A multicarrier communication system comprising:

means for transmitting a first initialization message indicating an impulse noise protection value;

means for receiving a second initialization message comprising information that indicates a number of repeated DMT, the number of repeated DMT symbols being greater than the impulse noise protection value; and

means for transmitting a third initialization message, wherein the transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message.

55. A multicarrier communication system comprising:

means for receiving a first initialization message indicating an impulse noise protection value;

means for transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

means for receiving a third initialization message, wherein at least one message bit is modulated onto repeated DMT symbols, wherein the number of repeated DMT symbols is indicated in the transmitted second initialization message.

59. A multicarrier communication system comprising:

a first transmitter module, in a first transceiver, capable of transmitting from the first transceiver to a second transceiver an initialization message indicating an impulse noise protection value;

a second transmitter module, in the second transceiver, capable of transmitting from the second transceiver to the first transceiver a second initialization message

comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value;

a modulation module, in the first transceiver, capable of modulating at least one message bit of a third initialization message onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the second initialization message transmitted from the second transceiver to first transceiver; and

the first transmitter module also capable of transmitting from the first transceiver to the second transceiver the third initialization message.

60. A multicarrier communication system comprising:

a transmitter module, in a transceiver, capable of transmitting a first initialization message indicating an impulse noise protection value;

a receiver module, in the transceiver, capable of receiving a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value;

a modulation module, in the transceiver, capable of modulating at least one message bit of a third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message; and

the transmitter module further capable of transmitting the third initialization message.

61. A multicarrier communication system comprising:

a receiver module, in a transceiver, capable of receiving an initialization message indicating an impulse noise protection value;

a transmitter module, in the transceiver, capable of transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

the receiver module, in the transceiver, capable of receiving a third initialization message from a second transceiver, wherein at least one message bit of the third initialization message was modulated onto repeated DMT symbols by a modulator in the second transceiver, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the transmitted second initialization message.

The term impulse noise protection value (INP) is interpreted according to the definition in the specification as such: “INP is defined in the ADSL2 and VDSL2 standards as the number of consecutive DMT symbols that, when completely corrupted by impulse noise, can be completely corrected by the receiver using FEC and interleaving during SHOWTIME.” (paragraph 4 of the specification) The highlighted portions indicate the significant portions of the claimed invention. Prior art, alone or in combination, fails to disclose the invention as a whole, more specifically, the highlighted portion and its connections according to the definition as provided by the specification and indicated above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LINDA WONG whose telephone number is (571)272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam Ahn can be reached on (571) 272-3044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LINDA WONG/
Examiner, Art Unit 2633
/SAM K AHN/
Supervisory Patent Examiner, Art Unit 2633

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: Marcos C. Tzannes	Group Art Unit: 2633
Application No.: 12/769,747	Examiner: WONG, Linda
Filed: April 29, 2010	Confirmation No.: 8332
Atty. File No.: 6936-55-PUS-CON	

For: IMPULSE NOISE PROTECTION DURING INITIALIZATION

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Madam:

Applicant submits this Comments on Statement of Reasons for Allowance to address further the Notice of Allowability ("Notice") having a mailing date of August 18, 2014.

In the Notice, the Examiner's stated reasons for allowance were that:

> The following is an examiner's statement of reasons for allowance:
>
> 44. A method, in a multicarrier communication system including a first and second transceiver, the method comprising:
> transmitting, from the first transceiver to the second transceiver, a first initialization message indicating an impulse noise protection value;
> transmitting, from the second transceiver to the first transceiver, a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and
> **transmitting, from the first transceiver to the second transceiver, a third initialization message, wherein the first transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the second initialization message transmitted from the second transceiver to first transceiver.**

45. A method, in a multicarrier communication system including at least one transceiver, the method comprising:

transmitting a first initialization message indicating an impulse noise protection value;

receiving a second initialization message comprising information that indicates a number of repeated DMT, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting a third initialization message, wherein the at least one transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message.

46. A method in a multicarrier communication system including at least one transceiver, the method comprising:

receiving a first initialization message indicating an impulse noise protection value;

transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

receiving a third initialization message, wherein at least one message bit of the third initialization message is modulated onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the transmitted second initialization message.

50. A non-transitory computer readable information storage media having stored thereon instructions, that when executed by a processor, cause the processor to perform a method in a multicarrier communication system including a first and second transceiver, the method comprising:

transmitting, from the first transceiver to the second transceiver, a first initialization message indicating an impulse noise protection value;

transmitting, from the second transceiver to the first transceiver, a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting, from the first transceiver to the second transceiver, a third initialization message, wherein the first transceiver modulates at least one message bit onto repeated DMT symbols, wherein the number of repeated DMT symbols is indicated in the second initialization message transmitted from the second transceiver to first transceiver.

51. A non-transitory computer readable information storage media having stored thereon instructions, that when executed by a processor, cause the

processor to perform a method, in a multicarrier communication system including at least one transceiver, the method comprising:

transmitting a first initialization message indicating an impulse noise protection value;

receiving a second initialization message comprising information that indicates a number of repeated DMT, the number of repeated DMT symbols being greater than the impulse noise protection value; and

transmitting a third initialization message, wherein the at least one transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message.

52. A non-transitory computer readable information storage media having stored thereon instructions, that when executed by a processor, cause the processor to perform a method in a multicarrier communication system including at least one transceiver, the method comprising:

receiving a first initialization message indicating an impulse noise protection value;

transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

receiving a third initialization message, wherein at least one message bit of the third initialization message is modulated onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the transmitted second initialization message.

53. A multicarrier communication system comprising:

means for transmitting from a first transceiver to a second transceiver a first initialization message indicating an impulse noise protection value;

means for transmitting from the second transceiver to the first transceiver a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

means for transmitting from the first transceiver to the second transceiver a third initialization message, wherein the first transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the second initialization message transmitted from the second transceiver to first transceiver.

54. A multicarrier communication system comprising:

means for transmitting a first initialization message indicating an impulse noise protection value;

means for receiving a second initialization message comprising information that indicates a number of repeated DMT, the number of repeated DMT symbols being greater than the impulse noise protection value; and

means for transmitting a third initialization message, wherein the transceiver modulates at least one message bit of the third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message.

55. A multicarrier communication system comprising:

means for receiving a first initialization message indicating an impulse noise protection value;

means for transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

means for receiving a third initialization message, wherein at least one message bit is modulated onto repeated DMT symbols, wherein the number of repeated DMT symbols is indicated in the transmitted second initialization message.

59. A multicarrier communication system comprising:

a first transmitter module, in a first transceiver, capable of transmitting from the first transceiver to a second transceiver an initialization message indicating an impulse noise protection value;

a second transmitter module, in the second transceiver, capable of transmitting comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value;

a modulation module, in the first transceiver, capable of modulating at least one message bit of a third initialization message onto the repeated DMT symbols, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the second initialization message transmitted from the second transceiver to first transceiver; and

the first transmitter module also capable of transmitting from the first transceiver to the second transceiver the third initialization message.

60. A multicarrier communication system comprising:

a transmitter module, in a transceiver, capable of transmitting a first initialization message indicating an impulse noise protection value;

a receiver module, in the transceiver, capable of receiving a second initialization message comprising information that indicates a number of repeated

DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value;

a modulation module, in the transceiver, capable of modulating at least one message bit of a third initialization message onto the repeated DMT symbols and wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the received second initialization message; and

the transmitter module further capable of transmitting the third initialization message.

61. A multicarrier communication system comprising:

a receiver module, in a transceiver, capable of receiving an initialization message indicating an impulse noise protection value;

a transmitter module, in the transceiver, capable of transmitting a second initialization message comprising information that indicates a number of repeated DMT symbols, the number of repeated DMT symbols being greater than the impulse noise protection value; and

the receiver module, in the transceiver, capable of receiving a third initialization message from a second transceiver, wherein at least one message bit of the third initialization message was modulated onto repeated DMT symbols by a modulator in the second transceiver, wherein the number of repeated DMT symbols used to modulate the at least one message bit of the third initialization message is indicated in the transmitted second initialization message.

The term impulse noise protection value (INP) is interpreted according to the definition in the specification as such: "INP is defined in the ADSL2 and VDSL2 standards as the number of consecutive DMT symbols that, when completely corrupted by impulse noise, can be completely corrected by the receiver using FEC and interleaving during SHOWTIME." (paragraph 4 of the specification) The highlighted portions indicate the significant portions of the claimed invention. Prior art, alone or in combination, fails to disclose the invention as a whole, more specifically, the highlighted portion and its connections according to the definition as provided by the specification and indicated above.

Based on the Notice, the patentability of all other independent and dependent claims is assumed to be based upon the elements as set forth in such claims and that such claims meet all criteria for patentability under §101, §102, §103 and §112.

As is clear from MPEP 1302.14,

"The statement [of reasons for allowance] is not intended to necessarily state all the reasons for allowance or all the details why claims are allowed and should not be written to specifically or impliedly state that all the reasons for allowance are set forth."

While the stated Reasons for Allowance may be a stated reason for allowing some independent claims, Applicant submits that some independent claims have a different reason for allowance and that some independent claims have other reasons for allowance.

Specifically, the prior art fails to teach the specific combination of features as recited in the independent claims 44, 45, 46, 50, 51, 52, 53, 54, 55, 59, 60, and 61..

Although the Applicant believes that no fees are due for filing this Comments on Statement of Reasons for Allowance, please charge any fees deemed necessary to Deposit Account No. 19-1970.

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: 3 Nov. '14

By: _____

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